

Notice of Allowability

Application No.

09/606,377

Examiner

Oanh L. Duong

Applicant(s)

AGARWAL ET AL.

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/23/2004.
2. ☒ The allowed claim(s) is/are 1-24.
3. ☒ The drawings filed on 28 June 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 5/13/05.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

INTERVIEW SUMMARY

1. Applicants' representative (Donald R. Boys, Registration No. 35,074) authorized examiner on May 13, 2005 to amend claims 1, 7, 13 and 19 to further define client and server pairs as client-server pairs between said each of the first plurality of processors and said at least one other of the first plurality of processors, and other dependent claims to correct any possibility of objection and/or 112 second problem.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

The invention as claimed, claims 1, 7, 13 and 19 specially include a limitation based upon *registering each of a plurality of processors with at least one other of the plurality of processors operating within the single data packet router*, in an arrangement *that each of the plurality of processors either runs or registers with a processor running both first and second protocols* (as defined in the specification page 14 line 13-page 15 line15). While system and method for registration of a remote protocol for communications between a client and a server is firmly documented by cited prior art, the *registering each of a plurality of processors with at least one other of the plurality of processors operating within the single data packet router*, in an arrangement *that each of the plurality of processors either runs or registers with a processor running both first and second protocols* limitations are novel and the invention is patentable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Donald R. Boys (Registration No. 35,074) on May 13, 2005.

The application has been amended as follows:

Please replace claim 1 as follow:

1. (Currently amended) In distributed processor system wherein a first and second protocol operating on individual ones of a first plurality of processors operating within a single data packet router are involved in independently generating or amending data for a routing database, and wherein each of the first of plurality of processors maintains a copy of the database, a method for synchronized maintenance and distribution of the routing database, comprising the steps of:

(a) running the first or the second protocol on each of the first plurality of processors, wherein each of the first plurality of processors independently generates or amends data for the routing database;

(b) registering each of the first plurality of processors with at least one other of the first plurality of processors, creating first client -server pairs operating within the single data packet router between said each of the first plurality of processors and said at least one other of the first plurality of processors, in an arrangement that each of the first plurality of processors either runs or registers with a processor running both the first and second protocols,

(c) sharing the generated or amended data for the routing database from first servers to first registered clients of the first client-server pairs, such that each of the first plurality of processors receives generated or amended data for the routing database from both the first and second protocols.

Please replace claim 2 as follow:

2. (Currently amended) The method of claim 1 wherein the system comprises a second plurality of processors upon which the first and second protocol do not run, and further comprising a step (d) for registering each of the second plurality of processors with at least one of the first plurality of processors, creating second client-server pairs between individual ones of the first and second plurality of processors, and a step (e) for sharing at least a subset of the routing database from second servers to second clients of the second client-server pairs.

3. (Currently amended) The method of claim 2 comprising a third plurality of processors upon which the first and second protocols do not run, and further comprising a step ~~[(e)]~~ (f) for registering each of the third plurality of processors with individual ones of the second plurality of processors, creating client-server pairs between individual ones of the second and third plurality of processors, enabling clients in the third plurality of processors to receive copies of the subset of the routing database.

4. (Currently amended) The method of claim 3 wherein, in one or more of steps ~~[(a), (c) and (e)]~~ (b), (d) and (f) clients register with a second processor to create a redundant server-client relationship for fault tolerance.

5. (Currently amended) The method of claim 4 wherein a client treats ~~[(the)]~~ two servers with which it registers as a primary and a secondary server, and communicates only with the primary server as long as the primary server remains capable of communication, and further comprising a step for activating the secondary server in the event the primary server fails.

6. (Currently amended) The method of claim 5 wherein, upon activation of the ~~[(second)]~~ secondary server, a copy of the routing database is sent to ~~[(the)]~~ client, which compares that copy with its own copy, determines ~~[(the)]~~ a difference, and uses only the difference in further propagation of copies.

Please replace claim 7 as follow:

7. (Currently amended) A distributed processor system comprising:

a first plurality of processors, each processor maintaining a copy of a routing database; and

first and second protocols operating on individual ones of the first plurality of processors, the first and the second protocols independently generating or amending data for the routing database;

characterized in that each of the first plurality of processors registers with at least one other of the first plurality of processors, creating first client-server pairs between said each of the first plurality of processors and said at least one other of the first plurality of processors, operating within the single data packet router, in an arrangement that each of the first plurality of processors either runs or is registered with a processor running both the first and second protocols, and first servers of the first client-server pairs share the generated or amended data for the routing database with first registered clients of the first client-server pairs, such that each of the first plurality of processors receives generated or amended data for the routing database from both the first and second protocols.

8. (Currently amended) The system of claim 7 comprising a second plurality of processors upon which the first and second protocol do not run, wherein each of the second plurality of processors registers with at least one of the first plurality of

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processors, creating second client-server pairs between individual ones of the first and second plurality of processors, and at least a subset of the routing database is shared from the first servers in the first plurality of processors to ~~[[the]]~~ second clients in the second plurality of processors.

9. (Currently amended) The system of claim 8 comprising a third plurality of processors upon which the first and second protocols do not run, wherein each of the third plurality of processors register with individual ones of the second plurality of processors, creating third client-server pairs between individual ones of the second and third plurality of processors, enabling clients in the third plurality of processors to receive copies of the subset of the routing database.

10. (Currently amended) The system of claim 9 wherein third clients register with ~~[[a second]]~~ an additional processor to create a redundant server-client relationship for fault tolerance.

11. (Currently amended) The system of claim 10 wherein a client treats the two servers with which it registers as a primary and a secondary server, communicates only with the primary server as long as the primary server remains capable of communication, and activates the secondary server in the event the primary server fails.

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12. (Currently amended) The system of claim 11 wherein, upon activation of the [[second]] secondary server, a copy of the routing database is sent to the client processor, which compares that copy with its own copy, determines [[the]] a difference, and uses only the difference in further propagation of copies.

Please replace claim 13 as follow:

13. (Currently amended) In a single data packet router wherein first and second routing protocols generating routing data operate on individual ones of a first plurality of processors, and wherein each of the first plurality of processors maintains a copy of a routing table, a method for synchronized maintenance and distribution of the routing table and a forwarding table subset of the routing table, comprising the steps of:

(a) running the first or the second routing protocol on each of the first plurality of processors, wherein each of the first plurality of processors independently generates the routing data for the routing table;

(b) registering each of the first plurality of processors with at least one other of the first plurality of processors, creating first client-server pairs between said each of the first plurality of processors and said at least one other of the first plurality of processors, operating within the single data packet router, in an arrangement that each of the plurality of processors either runs or is registered with a processor running both the first and second routing protocols; and

(c) sharing the routing data from first servers of the first client-server pairs to registered clients of the first client-server pairs, such that each of the first plurality of processors receives the routing data from both the first and second routing protocols.

14. (Currently amended) The method of claim 13 wherein the data packet router comprises a second plurality of processors upon which the first and second routing ~~[[protocol]] protocols~~ do not run, and further comprising a step ~~[[c)]]~~ (d) for registering each of the second plurality of processors with at least one of the first plurality of processors, creating second client-server pairs between individual ones of the first and second plurality of processors, and a step ~~[[d)]]~~ (e) for sharing a forwarding table subset of the routing table from the first servers in the first plurality of processors to ~~[[the]]~~ second clients in the second plurality of processors.

15. (Currently amended) The method of claim 14 comprising a third plurality of processors upon which the first and second routing protocols do not run, and further comprising a step ~~[[e)]]~~ (f) for registering each of the third plurality of processors with individual ones of the second plurality of processors, creating third client-server pairs between individual ones of the second and third plurality of processors, enabling clients in the third plurality of processors to receive copies of the forwarding table.

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16. (Currently amended) The method of claim 15 wherein, in one or more of steps [(a), (c) and (e)] (b), (d) and (f) clients register with [[a second]] an additional processor to create a redundant server-client relationship for fault tolerance.

17. (Currently amended) The method of claim 16 wherein a client treats the two servers with which it registers as a primary and a secondary server, and communicates only with the primary server as long as the primary server remains capable of communication, and further comprising a step for activating the secondary server in the event the primary server fails.

18. (Currently amended) The method of claim 17 wherein, upon activation of the [[second]] secondary server, a copy of the routing table [[of]] or forwarding table is sent to [[the]] client, which compares that copy with its own copy, determines [[the]] a difference, and uses only the difference in further propagation of copies.

Please replace claim 19 as follow:

19. (Currently amended) A data packet router comprising:
a first plurality of processors, each maintaining a copy of a routing table; and
first and second protocols operating on individual ones of the first plurality of processors, the protocols independently generating or amending routing data for the routing table;

characterized in that each of the first plurality of processors registers with at least one other of the first plurality of processors, creating first client-server pairs between said each of the first plurality of processors and said at least one other of the first plurality of processors operating within a single data packet router, in an arrangement that each of the plurality of processors either runs or is registered with a processor running both the first and second protocols, and first servers of the first client-server pairs share the generated or amended routing data with first clients of the first client-server pairs, such that each of the first plurality of processors receives generated or amended routing data from both the first and second protocols.

20. (Currently amended) The router of claim 19 comprising a second plurality of processors upon which the first and second ~~[[routing]]~~ protocols do not run, wherein each of the second plurality of processors registers with at least one of the first plurality of processors, creating second client-server pairs between individual ones of the first and second plurality of processors, and at least a forwarding table subset of the routing table is shared from the first servers in the first plurality of processors to ~~[[the]]~~ second clients in the second plurality of processors.

21. (Currently amended) The router of claim 20 comprising a third plurality of processors upon which the first and second ~~[[routing]]~~ protocols do not run, wherein each of the third plurality of processors register with individual ones of the second plurality of processors, creating third client-server pairs between individual ones of the

second and third plurality of processors, enabling clients in the third plurality of processors to receive copies of the forwarding table subset of the routing [[database]] table.

22. (Currently amended) The router of claim 20 wherein clients register with [[a second]] an additional processor to create a redundant server-client relationship for fault tolerance.

23. (Currently amended) The router of claim 22 wherein a client treats [[the]] two servers with which it registers as a primary and a secondary server, communicates only with the primary server as long as the primary server remains capable of communication, and activates the secondary server in the event the primary server fails.

24. (Currently amended) The router of claim 23 wherein, upon activation of the [[second]] secondary server, a copy of the routing or forwarding table is sent to [[the]] third client, which compares that copy with its own copy, determines [[the]] a difference, and uses only the difference in further propagation of copies.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Oanh Duong whose telephone number is (571) 272-3983. The examiner can normally be reached on Monday- Friday, 8:00AM - 5:30PM.

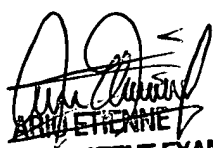
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

O.D

May 15, 2005


ARIO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100